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ABSTRACT

Lortie has described teacher sentiments that meld into a structure called the autonomy/equality norm. This norm helps preserve the separation of teaching from organizational and collegial purviews. As part of a larger study which looks for conditions that affect and are influenced by variations in task interdependence among teachers, an effort was made to develop a questionnaire technique for measuring the norm simultaneously in a number of elementary schools. Questions were constructed on the conceptual and operational framework proposed by Jackson as a means to portray and measure norms. This largely methodological paper gives the essential underlying concepts and describes the instrument, its capabilities and scoring procedures. In addition, certain analyses are reported in which characteristics of the norm are shown in relation to other organizational features. The regulatory potential of the autonomy and equality norm seems rather stable over time but fluctuates with changes in membership stability and task interdependence. (Author)

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A QUESTIONNAIRE METHOD FOR MEASURING THE AUTONOMY/EQUALITY NORM

by

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Abstract

Lortie has described teacher sentiments that meld into a structure called the autonomy/equality norm. This norm helps preserve the separation of teaching from organizational and collegial purview. As part of a larger study which looks for conditions that affect and are influenced by variations in task interdependence among teachers, an effort was made to develop a questionnaire technique for measuring the norm simultaneously in a number of elementary schools. Questions were constructed on the conceptual and operational framework proposed by Jackson as a means to portray and measure norms.

This largely methodological paper gives the essential underlying concepts, and describes the instrument, its capabilities and scoring procedures. In addition, certain analyses are reported in which characteristics of the norm are shown in relation to other organizational features. The regulatory potential of the autonomy and equality norm seems rather stable over time but fluctuates with changes in membership stability and task interdependence.

A Questionnaire Method for Measuring the Autonomy/Equality Norm*

As part of a larger investigation on the effects of introducing a formal unit structure into elementary schools, an attempt was made to predict in which of the newly unitized schools teachers would first show an increase in task interdependence (Packard, et al., 1976). Prominent among the various features under consideration in the prediction study are teacher norms concerning collaboration. To measure these two wholly independent developments have been synthesized; namely, Lortie's work on teacher sentiments and Jackson's technique for measuring the norms of a social system. This paper reports on the development of the measurement procedure. Included in the discussion are some preliminary analyses of two rounds of data collected over a six month interval in 38 elementary schools.

Control and Coordination of Teacher Work

Sociological investigations of the school have focused on their bureaucratic characteristics and teacher professionalism to understand the manner in which teacher work is controlled and coordinated (Pellegrin and Stehr, 1971). From these studies, it seems, the concept of bureaucracy fits schools and school districts only loosely. Educational technology is incomplete, teacher job descriptions contain only implicit clues for instructional practice, supervision of teachers is remote and indirect and the efficacy of

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*Research reported here is supported by the National Institute of Education. However, claims and opinions expressed here should not be construed to have federal endorsement. Richard O. Carlson prepared the final questionnaire items for the measure. Significant contributions to the development of the measure also were made by W. W. Charters, Jr. and Norman J. Boyan.

teacher performance is inferred from spotty and task irrelevant evidence. In short, classroom teaching seems to be regulated little by supervisors, rules or formal operating procedures.

Also, the teaching occupation does not possess characteristics that define a profession. Teachers do not control entry into or exit from their occupation. Neither do they create nor control the positions they occupy. Nor have they promulgated standards to guide, evaluate or sanction member behavior. Rare are the opportunities in which teachers observe one another while teaching.

Accounts of the great variability in classroom behavior among teachers even in the same school has prompted at least one observer (Pellegrin, forthcoming) to conclude teacher work can be best described as idiosyncratic specialization; that is, organizationally and professionally uncontrolled.

Teacher Sentiments about Work.

Lortie (1975, 1973, 1964) among many others has documented teacher sentiments which favor the absence of close scrutiny of their work. Those sentiments coalesce in a school into a normative system which promotes teacher discretion over the affairs of the classroom. The norm, autonomy/equality, does not directly prohibit teacher collaboration (which might reduce discretion). Rather, it holds that collaboration between teachers should not be required. Interacting partners should be free to form and dissolve arrangements that may bind them.

The norm folds back upon itself. Preserving one element preserves the other also. To explain, the autonomy aspect holds that the teacher is the

legitimate authority over classroom matters--instructional processes, student motivation, pupil control and evaluation. No member of the faculty, whether teaching colleague or administrator, may undermine this authority. The equality element conveys the belief teachers do not differ in teaching ability. The complex and intricate process of teaching is highly personal and, thus, not amenable to evaluation. Judging differences in teacher effectiveness is not legitimate and should not be part of official practice. The absence of a basis for assessing teacher effectiveness promotes classroom autonomy. The preservation of autonomy thwarts official efforts to evaluate teacher effectiveness. The norm gives each teacher uncontested access to the key rewards of the occupation, personal knowledge of the intellectual and social progress of one's pupils.

Lortie's formulation of the autonomy/equality norm derives primarily from numerous teacher interviews. To our knowledge there exists no standard group administered (and inexpensive) data taking technique for this construct. Furthermore, there is no convenient way in which variations in the norm can be described and analyzed. Finally, we do not know what conditions may be associated with variations in the norm.

Measuring and Describing Norms in a Social System

Jackson (1960, 1962, 1966 and 1973) argues two outputs derive from the input of sentiments by members of a social system. Normative power, NP, refers to the return potential or sanction a member might experience when exhibiting a particular behavior. In other words, it represents the energy available for regulation. Conflict potential, CP, the second output, refers

to energy put into the system which, due to degree of dissensus among members, is not available for sanctioning.

Estimates of the value of these two outputs derive from the distribution of recorded sentiments on a bipolar approval/disapproval scale. For any behavior, normative power is high when most members strongly and uniformly approve or disapprove of the behavior. Normative power diminishes as the distribution of sentiments ranges narrowly around the point of indifference. Said differently, normative power is a function of the average deviation of sentiments from the mid-point of the scale. Conflict potential is a function of the variance in sentiments. When the variance is low, so is conflict potential. When the variance is great, conflict potential is high.

The average deviation of sentiments is called intensity, I. For any value of I greater than zero, the variance (also called crystallization, C) can vary between fixed maximum and minimum values. Crystallization is zero when intensity equals zero. But when intensity equals 1, for example, the variance can range from zero to 4. When intensity equals 2, the variance can range from zero to 8. When intensity reaches its maximum value 4 (on a nine point sentiment scale) the variance can range from zero to 16.

These conditions also place limits on the derived values, normative power and conflict potential, such that for any value of I the two terms may take on fixed maximum values ranging downwards always to a minimum value of zero. Due to the manner of computation (formulae are included in Note 1 at the end of the paper) for any value of I the sum of the conflict potential and the normative power values always total a constant. Thus, normative power and conflict potential form a perfect inverse relationship. As the value of I increases

both the maximum values of NP and CP increase as does the constant to which they sum (see Note 2).

Despite these problems, Jackson's scheme differentiates nicely among various distributions of sentiments, especially those with the same or similar mean summative scale scores. For example, it is well known that unimodel, bimodal and nonmodal distributions of scores may all have the same mean values. The average deviation from an arbitrary midpoint, intensity, differentiates among these distributions. The crystallization term further defines the distribution.

Jackson's scheme also possesses attractive semantic and descriptive properties. For example, by use of the terms NP and CP a norm can be tabbed as organized, disorganized or unorganized. An organized norm portrays the condition of strongly expressed and invariate sentiments, i.e., high normative power and low conflict potential. A norm that is disorganized may be associated with sentiments which are strongly expressed but which are also quite variable across respondents, i.e., moderate normative power with moderate to high conflict potential. An unorganized system is one in which consensus falls on the point of indifference, i.e., both NP and CP are close to zero (see Note 3).

In the Jackson tradition questions are constructed by combining two scales. One is the bipolar sentiments scale consisting, often, of nine points. The second is the behavior scale where there are usually listed five serially ordered and intervally scaled amounts of the same behavior, e.g., being late for work one, two, three, four and five days per week. Subjects record their sentiments for each position (or behavior) on the behavior scale. NP and CP

are computed across all like respondents for each behavior. These values are then averaged over the five behaviors. The average NP and CP scores are then used to describe the norm.

Measuring the Autonomy/Equality Norm

Since at a conceptual level autonomy and equality exhibit a dynamic interplay, we adopted the strategy of preparing behaviors which as much as possible measured each aspect of the norm separately and cleanly. In this fashion, we felt, we would avoid the problems of "double loading" and thus benefit by more unequivocal interpretation of the responses. Furthermore, we would be in position to test empirically the relation between the two norms. Due to growing time pressures, it was also decided to prepare just two behavior scales, one for autonomy and one for equality. For the same reason we could not pilot a draft of the measure and select before the first "live" application the most useful items. Thus, seven candidate behaviors were placed on the autonomy scale and six on the equality scale. Only the five most suitable items for each scale are retained for analysis.

We should also point out in advance what will become obvious shortly. Efforts to prepare intervally scaled and serially ordered amounts of the same behavior for the behavior scale proved futile. Rather, events in the umbra of each norm are a "mixed bag" of interrelated characteristics. To test for the effects of variations of each characteristic while holding the others constant was a task too ambitious for our modest purposes. Instead, effort was given to develop behavior descriptions such that the face validity of the depicted action was high and unequivocally, to the best of our judgment, aligned with either autonomy or equality.

The original items used in the two collections of data which we shall report are listed below.

Autonomy

How much would you approve or disapprove of . . .

1. an experienced teacher who insistently advises younger teachers on better ways of reaching the slow learner.
2. a principal who privately reprimands a teacher for giving unusually low marks on report cards.
3. a teacher who goes into detail, when talking to parents, about how other teachers in the school discipline students.
4. a principal who exactly specifies the conduct rules each teacher should set up in his own classroom.
5. a teacher who insists that your class join hers in viewing an ecology film.

Items 1-5 were retained for analysis purposes. The two items below were dropped for reasons which will be explained later.

* a principal who refuses to take action on behalf of parents when they complain about a strict teacher.
* a teacher who chooses not to use a new reading approach that other teachers in the school have adopted.

Equality

How much would you approve or disapprove of these proposals (if they were suggested in your school)?

1. A committee of teachers would be elected by the school faculty to evaluate teachers in the building. They would return their evaluations only to individual teachers.

2. A committee from the Parent's Association would assess teaching in each classroom. Insofar as possible, the committee would consist of parents with teaching experience. The committee would share its assessments with the principal and school staff.

3. A standardized achievement test would be given to pupils at the beginning and end of the school year. Average improvement scores for each home room would be prominently posted in the school.

4. Video tapes would be made in each classroom during the year. A district-wide committee of elementary teachers and supervisors would view the tapes and rate each teacher. Their ratings would be filed in the superintendent's office, with copies given to individual teachers.

5. Pupil evaluations of teachers would be collected in each classroom. (A non-verbal form would be used in the primary grades.) The evaluations would be submitted to the building principal.

The above items were retained for analysis. The following was not.

* A team of experts from outside the school district would appraise teaching in every elementary classroom. Their report, circulated to building principals and staffs, would not identify individual teachers or classrooms.

The behavior positions retained for the autonomy scale describe hypothetical events wherein one adult infringes upon the classroom related domain of at least one other teacher. The identity of the interloper varies by position and experience. The substance of the incursion varies also including joint teaching, pupil evaluation, teacher responses to student misbehavior, teaching style and teaching materials. The behaviors dropped from analysis represent not incursions, but reaffirmations of classroom discretion. This difference in content was clearly indicated in the patterns of teacher sentiments.

The behaviors retained for equality are worded as proposals for somewhat unique and more revealing ways of evaluating teacher performance. The proposals are various including how the assessment would be conducted, the extent to which the results would be privy to others and in the degree to which individual teachers could be compared. The item dropped from analysis was first identified by the different pattern of responses it produced. Subsequently, we realized this proposal was not dissimilar to the tepid accreditation episodes which schools occasionally undergo and against which teachers have probably developed a working immunity.

Data collection. The measures of autonomy/equality were first administered in November of 1974 to over 500 elementary teachers in 38 schools in five eastern states. The autonomy/equality measures were included as one of ten parts of a larger questionnaire which was administered by a local project representative in each region to the entire faculty group one school at a time. Usable questionnaires were returned at a rate of 98%. The measures were applied roughly six months later, in April 1975. Administration occurred as before. Response rate remained at the previous level.

Item selection. The first analysis task was to select for each concept, autonomy and equality, five behaviors which suited best the requirements for scale construction. The following criteria were emphasized. Behaviors that form a scale should tap the same underlying dimension but were expected to show only modest correspondence with one another. Behaviors that tended to descriminate more between schools and less between teachers within schools would be preferred. Behaviors should indicate clear regulatory potential--that is normative power should be more pronounced than conflict potential.

Two behaviors dropped from the autonomy scale were trivially associated with the other behaviors and with the total scale score--r's ranged from 01 to 12. The average interbehavior correlation rose 3 points with their removal. Analysis of variance techniques showed them to be less effective than the remaining behaviors in discriminating among schools. Inspection of the content of the items confirmed the suspicion they were of a different order than the remaining behaviors. These did not portray violations of the norm. Finally these two excluded items had the lowest normative power values.

One of the original six behaviors for the equality scale was dropped on the basis of less conclusive evidence. Its association with the other behaviors was relatively high (17 to 46). It also corresponded closely with the total scale score, (70). When removed from the group the average interbehavior correlation fell one and a half points. However, the behavior did not discriminate as well among schools as the others nor was it vested with as much regulatory potential.

Internal consistency. A summary of interbehavior and behavior scale correlations for the ten remaining behaviors are shown in Table 1 below. Cell entries are r values at both data collections. The average interbehavior correlations among autonomy behaviors (.18 and .21 at t_1 and t_2) is 10 points less than that for the equality behaviors (.28 and .30). Neither value is particularly high. Both results were expected. The autonomy behaviors are considerably more variable in content than the equality behaviors. Not only may this account for the lower correlations among members of this group but reflects as well the broader range of issues covered by autonomy. Furthermore, behaviors were written consciously to create wide variation in the kinds of sentiment

Table 1: Raw Score Correlations, Estimates of within Individual Internal Consistency and School Stability

	Range		Mean		Internal Consistency* (within individual)	
WITHIN SCALE r's	t_1	t_2	t_1	t_2	t_1	t_2
Autonomy Behaviors	09-33	09-33	18	21	.53	.55
Equality Behaviors	13-40	09-41	28	30	.80	.66
ACROSS SCALE r's						
Autonomy/Equality	05-25	05-23	13	14	-	-
BEHAVIOR/SCALE r's						
Autonomy Behaviors / Autonomy Scale	51-63	55-69	51	57	-	-
Autonomy Behaviors / Equality Scale	12-21	15-24	18	21	-	-
Equality Behaviors / Equality Scale	49-72	55-73	63	66	-	-
Equality Behaviors / Autonomy Scale	14-18	18-28	16	22	-	-
SCALE/SCALE r's	t_1 = 21, t_2 = 33 (within individual)					
	n_1 = 568, n_2 = 575					
SCHOOL/SCALE r's OVER TIME (t_1-t_2)	Autonomy = 71, Equality = 75 N = 38 schools					

*Cronbach's alpha

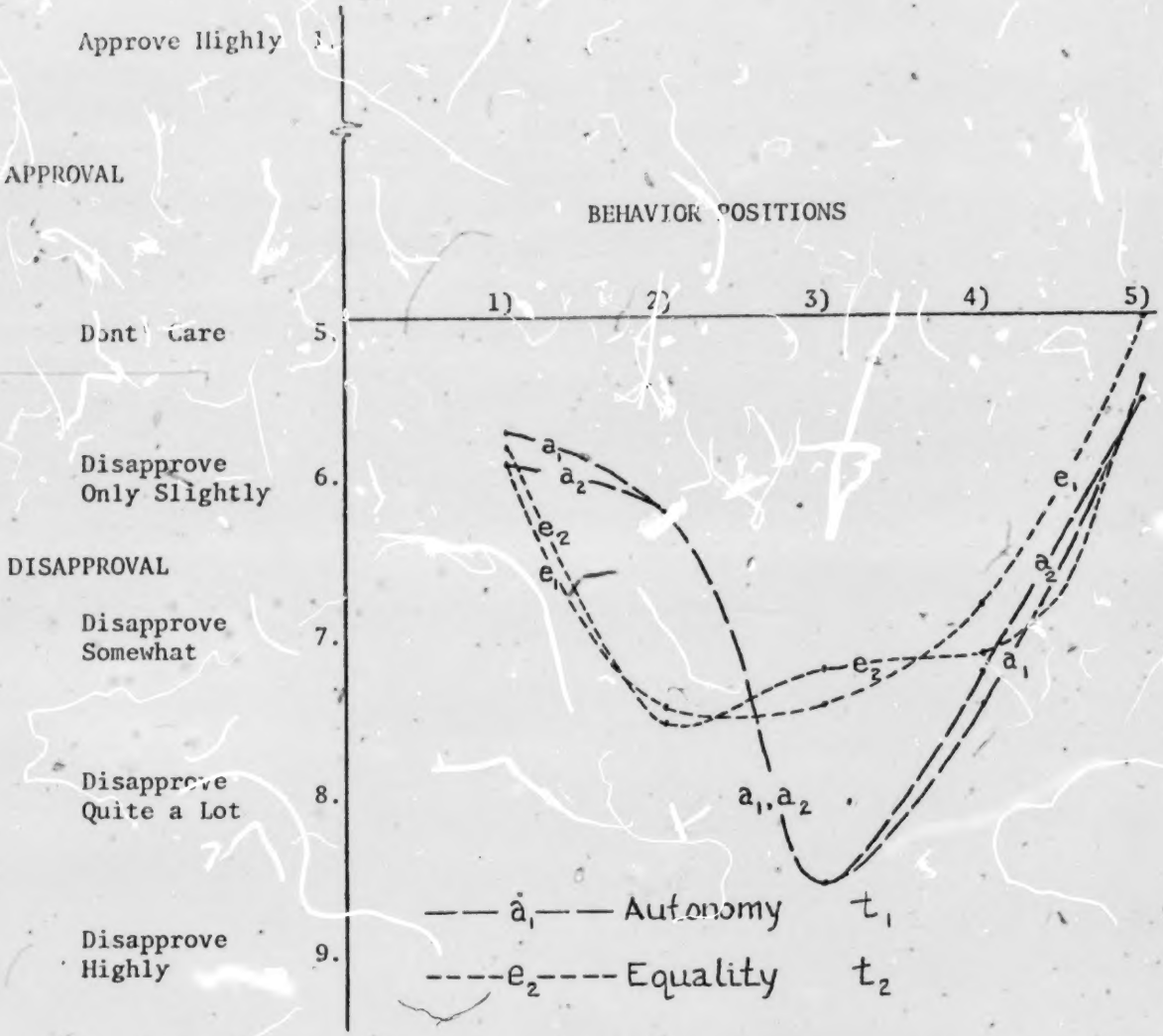
they would evoke so as to highlight differences between and changes within schools (This is illustrated in Figure 1.)

Correlations between behavior positions across the two scales averaged 13 and 14 (at time one and time two). Scale scores correlated modestly (21 and 33). Overall, each behavior position corresponded with its own scale to a degree substantially greater than with the other scale. Such patterns suggest the behavior positions successfully distinguish between the two aspects of the norm and that the scale scores can be regarded as relatively independent. School scale scores at time one correspond well with those at the second data collection--r's are 71 and 75.

Estimates of internal consistency using Cronbach's alpha are .53 and .55 for autonomy (at t_1 and t_2) and .80 and .66 for equality. Such modest values are probably due to the brevity and heterogeneity of the scales.

Additional properties. Behavior positions were prepared to create a range of sentiments along the resultant behavior scales. Assuming Levine to be correct, we expected no behavior would be approved. Some, however, should receive stronger disapproval than others. This was borne out. Figure 1 shows the actual patterns of mean raw score values aggregated across the 38 schools at time one and again at time two. Certain variations in these curves can be useful in assessing alterations in the norms of a particular school (see Jackson, 1962). In our scoring procedure the higher values were assigned to the disapproval side of the sentiment scale.

The table in the figure contains the mean, standard deviation and skewness scores of sentiments for each behavior. All mean scores fall on or below the point of indifference. As the means depart from this point, there



	Behavior Position	AUTONOMY 1	2	3	4	5	EQUALITY 1	2	3	4	5	
t_1	Mean	5.7	6.2	8.5	7.4	5.4	5.9	7.4	7.4	6.8	5.0	
	S.D.	2.4	2.3	1.0	1.8	2.6	2.6	1.9	2.1	2.2	2.5	N=568
	Skew	-0.4	-0.6	-3.5	-1.5	-0.2	-0.3	-1.2	-1.4	-0.8	0.2	
t_2	Mean	5.9	6.2	8.5	7.2	5.5	5.8	7.5	7.2	6.9	5.4	
	S.D.	2.4	2.2	1.1	2.1	2.7	2.7	1.9	2.3	2.2	2.6	N=575
	Skew	-0.4	-0.8	-3.0	-1.2	-0.2	-0.3	-1.3	-1.2	-0.8	0.0	

Figure 1: Sentiments at each behavior position; Autonomy and Equality at the first (t-1) and second (t-2) data collections. Raw scores only.

is an expected corresponding decrease in standard deviation, and obviously the distributions become increasingly skewed in a negative direction. (Items dropped from the analysis fell near the indifference point on the sentiment scale. Two were unusually and negatively skewed.)

The figure also shows that which Lortie had previously reported. Teacher sentiments are disapproving of events which might serve to reduce individual control over the classroom. Certain behaviors such as autonomy number 3--talking to parents about other teachers' discipline practices--receives universally high disapproval. Positions 1 and 5 on both scales, while falling on the disapproval side, can be more accurately described as viewed with indifference by teachers. Inspecting these patterns on a school-by-school basis shows generally little variation in the shape of the different curves. Instead, the position of the curves relative to the midpoint of the sentiments scale tends to be the most central distinction among schools. For example, in certain schools positions 1 and 5 on one or both scales fall on the approved side of indifference.

Normative Power. The logic for the derivation of normative power and conflict potential has already been introduced. The reader is again reminded that rules for computation are in Note 1 at the end of this paper. Due to the mathematical fact that for any value of intensity--the average deviation--normative power and conflict potential form a perfect negative correlation, we shall deal only with normative power in the following analyses. Note 2 gives a more explicit rationale for this decision.

Normative power refers to the probable sanctions or return potential a member of a social system might encounter for having exhibited a specific

behavior. Knowledge of the social system and, thus, the risks and benefits of pertinent behaviors, may forestall conduct which would likely evoke strong negative sanctions. On the other hand, behaviors netting positive sanctions may be expressed more frequently. Presumedly, behaviors for which there are no sanctions will occur with random frequency.

Given the distribution of raw scores for the various behaviors on the autonomy and equality scales, we assume these and related behaviors are infrequently encountered in the schools under study. This seems especially so for those behaviors most strongly disapproved. However, there is considerable variation among the schools implicated in this study as shown by the normative power scores listed in Table 2.* An important question to pose of these data has to do with the conditions under which variations in normative power for autonomy and equality occur. We shall make an exploratory venture in this direction.

Findings. Inspection of Table 2 suggests the school values of normative power are relatively stable over time. This is supported by the within norm over time correlations reported in Table 3.

The correlation between autonomy normative power at t_1 and t_2 is moderately high, $r = .68$. By the same token correspondence between the two equality values is similar in magnitude, $r = .69$. Across all schools the average NP scores do not appear to change that much. However, the difference between the t_1 and t_2 mean normative power scores for autonomy (actually .0277)

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*We report data from 36 of the 38 schools because two schools had not been in existence for a period sufficient to allow for comparability in interpreting NP.

Table 2: Normative Power for Autonomy and Equality by School and Region At the First (t_1) and Second (t_2) Data Collections

Region	School	Autonomy		Equality		Means by Region			
		NP_{t_1}	NP_{t_2}	NP_{t_1}	NP_{t_2}	Autonomy t_1	Autonomy t_2	Equality t_1	Equality t_2
1	02	.47	.43	.42	.49				
	03	.35	.32	.33	.36				
	05	.44	.44	.40	.44				
	06	.43	.46	.23	.32				
	07	.44	.35	.48	.39				
						.43	.40	.38	.40
2	08	.40	.45	.35	.42				
	09	.40	.44	.27	.34				
	10	.55	.38	.36	.24				
	11	.48	.44	.35	.32				
	12	.38	.35	.35	.31				
						.44	.41	.34	.33
3	13	.51	.46	.30	.36				
	14	.56	.51	.42	.56				
	15	.47	.45	.54	.55				
	16	.50	.42	.48	.41				
						.51	.46	.44	.47
4	17	.52	.53	.37	.23				
	18	.41	.37	.19	.29				
	19	.37	.29	.38	.34				
	20	.42	.38	.31	.31				
	21	.40	.40	.41	.29				
	22	.37	.33	.32	.33				
						.42	.38	.33	.30
5	24	.36	.40	.42	.41				
	29	.44	.38	.26	.19				
	30	.26	.37	.44	.36				
	31	.31	.36	.45	.37				
	32	.35	.38	.43	.37				
	33	.45	.47	.36	.50				
	34	.40	.36	.49	.41				
	35	.54	.52	.68	.63				
						.39	.40	.44	.40
6	36	.43	.35	.32	.27				
	37	.42	.30	.31	.27				
	38	.31	.23	.29	.29				
	39	.37	.32	.27	.40				
	40	.38	.35	.33	.29				
	41	.42	.45	.33	.28				
	42	.41	.36	.33	.25				
	43	.43	.40	.29	.26				
						.40	.34	.31	.29
Mean		.42	.39	.37	.36				
SD		.07	.07	.09	.10				

Table 3: Association of Normative Power Values Within and Across Time Samples

	1	2	3	4
(1) Autonomy t_1	---	.68	.35	---
(2) Autonomy t_2		---	---	.38
(3) Equality t_1			---	.69
(4) Equality t_2				---

is greater than could be expected due to chance alone. Nevertheless, the t_1 autonomy values account for about 46 percent of the variance in the corresponding values at t_2. For equality the parallel figure is roughly 48 percent of the variance.

Thus, to a moderate degree the normative power shown at one point in time predicts with confidence the corresponding value six months later during the same school year. However, slightly more than half of the variance is not taken into account.

By the same token, within a school there appeared a mild positive relation between the normative power of the autonomy and the equality norms, $r = .35$ at t_1 and .38 at t_2 (see Table 3). While these across scale within time associations are considerably weaker than the within scale across time relations, one scale accounts for more than a trivial amount of the variance in NP in the other. (We have not tried to disentangle the effects of time from those of scales.) Yet, the empirical relation between norms for autonomy and equality is not as tight as Lortie's conceptual development might imply.

Region. Table 2 also displays the NP scores by region. Schools in the project were located in various geographic, demographic and political regions of the eastern United States. Within certain regions the environment was considerably more variegated than in others. Yet, we are not in position to make fine distinctions among these 36 schools according to their particular environmental characteristics. Analysis of variance indicates that certain of the differences among schools were related to region or location. At both data collections equality normative power mean scores differed significantly

among the six regions. For autonomy regional differences were significant at t_1 but not at t_2 (at least not at the .05 level). The pattern of regional mean scores indicates that normative power was greater in areas we have come to regard as more urban and industrialized. Correspondingly, normative power was lower in rural, agricultural regions.

Size. Conceivably the number of members in a social system might affect a norm. With a larger membership, norms may not form as surely as in a smaller system. The larger the group the greater the tendency for the formation of cliques. In these, compatible members can openly entertain and find support for views at odds with the prevailing traditions and with the views of others. The method of computing normative power adjusts for dissensus among respondents so that for any given level of intensity normative power is decreased as a direct function of the variance. We might expect, therefore, that school size and NP form a negative relationship.

This line of reasoning does not receive support in our data. at t_1 the schools in the study ranged in number of classroom teachers (the only respondents to the autonomy/equality measure) from eight to 29. The average school contained between 16 and 17 regular classroom teachers. At t_1 the correlation coefficient between school size--measured in this fashion-- and autonomy normative power was zero. For equality $r = -.13$ and is only slightly suggestive that larger systems have weaker norms.

Structure. Among the schools in the sample, 16 had adopted a formal unit structure at about the time data were first collected. Formal unit structure refers to the case where teachers in the school are officially assigned to teams.

Each teacher has membership on only one team. There may be as many as four to five teams per school each with three to five teachers and upwards of 150 students for whom the team has instructional responsibility. One member of the team is designated as the team or unit leader.

The creation of this new structure is often viewed as a means to individualizing instruction. The strategy is to pool talent and resources and divide work among teachers. Accordingly, in the 16 schools members of each team were expected to meet frequently to plan and implement jointly their program of instruction. Earlier research that compares these with conventional types of schools (Packard, et al., 1976) indicates that greater collaboration does occur among teachers in schools with a unit organization. In large measure our current study, of which this report is a minor segment, is conducted in an effort to plot longitudinally the course indicated by these earlier efforts.

Thirteen other schools in the sample, located in the same districts as the newly unitized schools, retained their conventional pattern of instructional organization.

Conceivably, schools that are committed to adopt a unit organization, which is designed, and has been shown, to engender higher levels of teacher collaboration and thus professional visibility, may be different prior to the point of adoption from schools which do make a similar commitment. As it pertains to autonomy/equality, adopting schools may be predisposed to the implications of the unit structure by virtue of a less severe normative structure. More specifically, given the pattern of teacher responses (Figure 1), adopting

schools may have lower levels of normative power for autonomy and equality. If this reasoning is valid, such differences would show up at t_1.

However, this line of reasoning is not supported by the data. A two factor (t_1 vs. t_2; unitized vs. non-unitized) analysis of variance indicated no regularities in differences in norms among the two types of schools. No factor, time nor school type, had a significant effect on normative power for autonomy or equality. This is somewhat surprising since normative power autonomy dropped significantly over all schools (seven of which were not included in this analysis) from the first to the second data collections. Furthermore, the analysis revealed no significant interactions.

Task Interdependence. However, the unit, non-unit distinction is sufficiently crude to gloss over substantial similarity between the two sets of schools and considerable variation between schools within each type. One case in point is the variable task interdependence. It is conventional to hold that the typical elementary school is largely if not exclusively earmarked by the self-contained classroom. At least this was our assumption at the outset of our study. We have learned from the first and subsequent data collections that this assumption is not a useful characterization. Almost every member of both sets, unitized and non-unitized elementary schools, exhibit measurable levels of task interdependence. In some cases the level is surprisingly high, even in a conventional school.

We elaborate at good measure on the precise conceptual and operational definition of task interdependence elsewhere (Packard, et al., 1976, Appendix A) and shall not repeat the technical details here. The essential

points at issue are types of departures from the self-contained classroom where students remain with the same teacher for all the major subjects throughout the school year. Task interdependence occurs when children are exchanged between teachers more frequently than on an annual cycle. Our sample covers ten consecutive days per term and approximately 10 percent of the pupil population of each school. We are set to observe two types of exchanges of students. Throughput interdependence is the less problematic variety and involves exchanges of common students for lessons in different subject areas. Instructional interdependence is the more problematic variety of task interdependence as exchanges are made within the same subject. Data on both types of task interdependence were collected at t_1 and t_2.

Presumedly higher levels of task interdependence cause teachers to tighten coordination with one another, especially as patterns of exchange are probably not directed or managed by administrators (at least not in the elementary school). Thus, increased interdependence is expected to be regarded as threatening to the principles of autonomy/equality. Where normative power is high we would expect to observe lower levels of task interdependence than where it is low. Specifically, throughput interdependence, TPI, and instructional interdependence, INI, should be negatively correlated with normative power for equality and autonomy, with the latter relationship somewhat greater in magnitude.

TPI and INI values are computed by counting the number of teacher pairs involved in each type of instructional interdependence. This total is then divided by 2N; that is, twice the number of teachers observed. This denominator is an estimate of the total possible pairs and was chosen over other

alternatives which penalized large schools at a rate disproportionate to their size. Data reported in Table 4 below are based on task interdependence values from the 27 schools that provided sufficient data. At time one the mean TPI value was .27 with an SD of .26. At time two the corresponding TPI values were .23 and .19. For INI the mean and SD at time one were .10 and .14. At time two the INI values were .11 and .14.

The relationship between normative power and task interdependence was not as straightforward as had been anticipated. As expected, Table 4, TPI and normative power are negatively related at a modest level. This suggests that autonomy/equality normative power inhibits throughput interdependence. The relationship is consistently stronger between TPI and equality.

As regards INI, however, there appears a clear distinction between autonomy and equality. As expected, INI is negatively associated with equality and this association grows in magnitude over time. However, INI is positively associated with autonomy. The magnitude of this association also increases over time.

Undoubtedly, autonomy concerns are more closely related at a conceptual level to task interdependence than equality. Task interdependence does not introduce or connote formal evaluation of teachers. However, it does constitute a relationship in which discretion over one's class affairs can be restricted. Instructional interdependence calls for tighter and more intimate coordination than throughput.

In this sample of schools there was a differential increase in INI. At t_0, the school term prior to t_1, the unit and non-unit schools recorded

Table 4: Relation of Normative Power (NP) to Two Types of Task Interdependence: Throughput (TPI) and Instructional (INI)

	TPI_{t_1}	TPI_{t_2}	INI_{t_1}	INI_{t_2}
NP autonomy	-.07	-.25	.03	.28
NP equality	-.32	-.35	-.21	-.48

nearly equal and quite trivial amounts of INI. At t_1, however, the unit schools as a group showed a dramatic increase in INI which leveled and carried through t_2. The non-unit schools did not show any increase at t_1 or t_2 over the original value at t_0. In fact, many non-unit schools, 8 of 13 at t_1, and 9 at t_2, had no measurable instructional interdependence. Thus, the association between autonomy and INI is reduced by virtue of the fact so many non-unit schools have no INI. Taking just the unit schools, the association between the variables is .40 at t_1 and .43 at t_2. The relationship is .35 among those schools (unit and non-unit) with a measurable level of INI (calculation done at t_2 only).

This suggests that the norm of autonomy/equality may affect and be affected by INI. We cannot discern what proportions of the relationship to divide among these possibilities. However, it does seem feasible to think that the norm may inhibit initially the occurrence of INI and subsequently be hardened, particularly in the direction of preserving autonomy, as a result of greater experience in INI.

Regeneration. One last element whose influence it seems reasonable to test is the variable organizational regeneration (the reciprocal of organizational membership stability). McNeil and Thompson (1971) explain that as the proportion of organizational newcomers increases, there is a corresponding decrease in the ability of the veteran members to socialize newcomers into the prevailing traditions of the institution. Seemingly, normative structures will be weakened by increases in regeneration.

If normative power is a property of the group, rather than the individual, it can be expected to correspond to variations in regeneration in the following manner. Normative power, or regulatory potential, should become increasingly manifest as membership in the social system remains stable. With the influx of new members whose sentiments regarding particular events in the organization could not have been heavily influenced by local socializing agents, normative power should decrease. Cross-sectionally, normative power should be negatively correlated with regeneration.

Our method for computing regeneration did not follow exactly the strategy of McNeil and Thompson. Rather than computing the simple proportion of newcomers at any point in time, we created an index of the cumulative proportion of newcomers at each data collection. The base date was t_0, the school year prior to the fall of 1974 or t_1. By adding all teachers in their first year in the school at t_0 to all those in their first year at t_1, and dividing by the total number of faculty members at t_1 (regular classroom teachers only), a cumulative newcomer value was determined for each school. At t_2 the numerator was the sum of newcomers at t_0, t_1 and t_2. The denominator was the total of regular classroom teachers at t_2. This method of computation can result in values greater than 1, that is true. However, we deemed it to be a more sensitive measure of social system instability than a simple ratio of newcomers to veterans. Turnover often occurred in the same position more than once.

Cumulative newcomer values at t_1 ranged from .10 to .77 with a mean of .45 and a standard deviation of .18. At t_2 the corresponding figures

ranged from .10 to 1.00, mean .50 and SD, .23. Zero order correlations were computed between each normative power score and cumulative newcomer index at each time. These are given in Table 5.

The expected relations do hold up. With the exception of autonomy at t_1, there is a moderate negative correspondence between the index of cumulative newcomers and normative power. In other words, the return potential for violations of the norm of equality especially, and to some degree also for autonomy, is weaker where there is greater instability of membership.

Summary. We have discussed our efforts to develop a questionnaire method for measuring the norm of autonomy/equality. By adopting the general outline of item development and conceptual consideration of Jackson (1966, 1975) two behavior scales were created, one for autonomy and one for equality. Behaviors on the scales were considerably more heterogeneous than are traditionally found, especially with regard to autonomy. This feature and the brevity of the scale may account for the relatively modest levels of internal consistency in individual responses.

Also using Jackson's framework and computational procedures, we derived normative power values for each school at two points in time. Normative power represents the return potential or sanction the social system might exert over its members. Among the 38 schools in the sample the pattern of item responses and the size of the normative power values support Lortie's contention. The autonomy/equality norm is set to preserve the discretion of the individual teacher over the classroom.

However, we reported considerable variation among the schools in the sample. Normative power remained relatively stable (in the sense of rank order)

Table 5: Correlations Between Cumulative Newcomers and Normative Power (NP) at t_1 and t_2.

Correlations	Autonomy NP		Equality NP	
	t_1	t_2	t_1	t_2
Cum. New t_1	.02		-.35*	
Cum New t_2		-.26		-.45*

*r significant at .05.

from the first to the second data collections, a period of about six months. Normative power on one norm was not associated with variations in the other to the degree we expected. Variations were associated with regional differences, task interdependence and a measure of organizational regeneration, the cumulative newcomer index. No effort was made to sort out the independent contributions of these variables.

Normative power was unrelated to school size or to organizational structure as indicated by the presence or absence of units. The norm of autonomy did on occasion behave differently than equality, Average normative power dropped significantly from t_1 to t_2 for autonomy. The drop in equality normative power was not significant. Interestingly, autonomy and equality were differentially associated with task interdependence, especially instructional interdependence. This more intimate and problematic type of teacher work system is negatively associated with equality, but positively associated with autonomy. Seemingly, instructional interdependence hardens the autonomy norm, an unintended consequence of team teaching.

We feel we have developed a measure useful for organizational studies of the school. Its ease of administration and scoring as well as the relationships between the constructs and other organizational variables of theoretical significance suggest the measure might be applied broadly. For example, it is of theoretical and practical importance to better understand the relationship of the autonomy/equality norm to patterns of organizational succession, especially in the principal's position.

Furthermore, it seems feasible that certain educational innovations now extant, say PPBS and CBE, which aim at revealing more information about the

effectiveness of instructional programs and at tightening the various work systems of the school, might be more effectively installed where the norm is flaccid rather than turgid. The consequence of such innovations may be to increase rather than eliminate the salience of the norm. On the other hand, where more powerful mechanisms are set in place that protect teachers from the vagaries of external influences, say through professional negotiations, the norm may persist as a vestigial remnant or wither away entirely.

NOTES

1. Normative power for any position on the behavior scale is represented by the following formula (Jackson, 1975).

$$NP_i = \left[\frac{\overline{I_j}}{(sr/2)}\right]\left[1 - \frac{C_i}{C_{max}}\right]$$

Where NP_i is the normative power at the i^{th} position, $\overline{I_i}$ is the mean intensity at the i^{th} behavior position.

$$\overline{I_i} = \frac{\sum_{j=1}^{N_i} \left| x_j - 5 \right|}{N_i}$$

x_j is the response (on the sentiment scale) of the j^{th} respondent at the i^{th} position. N_i is the number of respondents at the i^{th} position. On a nine point sentiment scale 5 is the point of indifference. The term sr/2 is the maximum intensity, or one half the range, of the sentiment scale. C_i is the variance at the i^{th} position. $C_{max} = \overline{I}_i(\frac{sr}{2})$, where sr is the range. With a standard nine point scale $NP_i = \frac{4\overline{I}_i - C}{16}$. Normative power of a norm across all behavior positions is the mean normative power of all positions on the dimension.

$$NP = \frac{\sum_{i=1}^{M} NP_i}{M}$$

where M equals the number of positions on the behavior scale.

Note 1 continued.

Conflict potential of a norm at any position on the behavior scale is represented by the following:

$$CP_i = \frac{\overline{I}}{(sr/2)} - NP_i$$

With the standard nine point scale the formula becomes $CP_i = \frac{C_i}{16}$.

Conflict potential for a single behavior scale is $CP = \frac{\sum_{i=1}^{M} CP_i}{M}$

2. From the computational formulae for normative power and conflict potential (in Note 1) it can be illustrated that for any value of intensity greater than zero the values of the two terms sum to a fixed total. For example, if I = 2, NP and CP can range from 0 to .5. However, when NP = .5, CP = 0. Conversely when CP = .5, NP must be 0. When I = 3, the two values sum to .75. When I is at a maximum, or 4, the fixed total is 1.00. However, the same value of NP may be associated with different values of CP in different social systems due to different levels of I. For a given level of I, NP and CP form a perfect negative correlation. In a large sample of social systems the correlation will not be perfect, but should always be negative and of considerable magnitude. Quantitative analyses, therefore, need only take one of the two terms into account.

3. The distinctions between the three states of organization are not altogether precise. For those who wish to pursue the matter, it seems useful to require both the organized and disorganized system (per behavior) to have I equal to or greater than 2.5. When I = C the system is clearly organized. When I = .25C the system is clearly disorganized. An unorganized system can be defined when I = 1.0 or less. This leaves a good deal of area uncharted, that is true. However with these criteria, points in the uncharted areas can be described in terms of their algebraic distances from the distinct boundaries that are suggested here.

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